herpy

GECKOS

Lined Flat-tail Gecko

Uroplatus lineatus

A slender, long-legged leaf-tailed gecko from the eastern rainforests of Madagascar, which lives in and near bamboo. It has no skin fringes, but switches between plain light brown and sharp, dark longitudinal stripes. It is nocturnal, requires humid and well-ventilated air and is an animal to look at, not to handle.

Family: Gekkonidae English name: Lined flat-tail gecko Former name: *Ptyodactylus lineatus; Uroplates lineatus*

KEY FACTS

THE ANIMAL

Adult size	**25-28 cm** total length incl. tail
Lifespan	**2-15 years**
Active	**At night**
Lifestyle	**Arboreal**
Habitat	**Rainforest**
Difficulty	**Experienced**

CARE

Min. enclosure	**45 × 45 × 90 cm** L × W × H for 1 adult
Temperature, day	**24-26 °C**
Basking spot	**28-30 °C**
Temperature, night	**20-22 °C**
Humidity	**70-90%**
UVB	**Recommended** Ferguson zone 1
Diet	**Insects**
Kept	**Singly, in pairs or one male with several females**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**1-2 eggs**
Incubation	**85-95 days** at 21-27 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Least Concern (LC)**

About the species

Uroplatus lineatus differs clearly from the other leaf-tailed geckos. The body is elongated and almost cylindrical, the legs are long and thin without skin fringes, the head is narrow and slightly snake-like, and the skin is unusually smooth. Above the eyes sit two pointed scales like eyelashes, and the tail is flat and rounded and resembles a dry bamboo leaf. The species name comes from the Latin "linea", line, and points to the parallel, dark stripes that run down over the head and back.

The species measures about 13 cm from snout to vent and 25-28 cm in total, so it is among the large ones in the genus. The ground colour is light brown, sometimes almost without markings, at other times with five or six dark longitudinal stripes. The animal can change colour and contrast to some degree: at rest it is matt light brown, and when disturbed, active or stressed it can turn orange or develop sharp, almost black stripes, and the tail can develop crossbands. It rests in a stretched position along a bamboo stem, and here it almost disappears.

The leaf-tailed geckos are divided into groups by appearance and habitat. *U. lineatus* stands alone in its own group, which is tied to bamboo and wood without skin fringes. The species was described in 1836 by Duméril and Bibron under the name *Ptyodactylus lineatus*.

The species is quiet and most interesting to observe. It requires a keeper who can keep control of humidity, ventilation and temperature.

Read more: Humidity, misting and ventilation

Distribution and habitat

Uroplatus lineatus is found only on Madagascar, in the eastern rainforests and on the island of Nosy Boraha (Île Sainte-Marie) off the east coast. Recorded finds lie especially in the north-east, in the area around Marojejy and Masoala, but also further south, including at Zahamena. The type locality is unknown.

The species is assessed as Least Concern. The greatest threats are deforestation and collection for the pet trade. Because the records are scattered, the precise range is not known, and the map therefore shows only the east coast region where the species has been recorded.

> **Native range:** Madagascar.

HABITAT

The gecko lives in lowland rainforest and in stands of bamboo. The animals sit on bamboo stems and thin trunks, often on dry, dead bamboo, where the pattern matches the background. Against other backgrounds, for example thick tree trunks, they are far more visible. By day they rest almost motionless, and at night they hunt in the vegetation.

The climate on the east coast of Madagascar is warm and humid with rain most of the year and only a small variation between the seasons. Nights are slightly cooler than days, and humidity is high. The microclimate at the species' own habitat has not been measured, so the figures in the guide are based on keeping in captivity.

Care

THE ENCLOSURE

A single adult *Uroplatus lineatus* needs a terrarium of at least 45 × 45 × 90 cm (length × width × height). A pair or a small group needs at least 60 × 45 × 90 cm, and several animals require more floor area. Larger is better, because it makes a clear difference between top and bottom easier and gives more room for the vertical resting places. The terrarium should be tall rather than wide, because the species lives vertically on stems.

Furnish with dead and living bamboo, both vertical and at an angle, and with branches whose thickness corresponds to one to two times the animal's body width and which are at least twice as long as the animal. Bamboo tubes standing vertically are readily used as hides and can be used as an egg-laying site. Smooth surfaces such as glass are also used for resting, especially by young animals.

Glass suits best where the air in the room is dry (under 60 % humidity), because water settles as droplets on the panes, and the animals can climb on the glass. Mesh can be used in a humid room, but the animals cannot cling to the mesh. Whichever you choose, there must be good ventilation, so that the air does not stand still.

The substrate consists of a drainage layer, for example perlite or expanded clay pellets, covered with dead leaves, preferably bamboo leaves, and a little sphagnum. The substrate must be moist, but never wet. Avoid coarse, rough substrate and rough artificial rock: the animal strikes at prey in quick lunges and can get snout injuries. Live plants that tolerate humidity and dim light hold the moisture and provide cover.

Little is known about keeping *Uroplatus lineatus*. Where figures are missing, the guide is based on the better-known leaf-tailed geckos, for example *Uroplatus henkeli* and *Uroplatus sikorae*, which have the same basic requirements for humidity, ventilation and temperature.

Read more: Terrarium construction and bioactive substrate

TEMPERATURE

By day the terrarium should be 24-26 °C and at night 20-22 °C. The night-time drop is important for well-being and also helps the air circulate in a glass terrarium. A small seasonal variation of 2-3 degrees, with the coolest days in winter, suits the species.

Leaf-tailed geckos tolerate heat poorly. Never let the terrarium rise above 27 °C for any length of time, and place it in a cool spot without direct sun. Measure with digital thermometers both at the top and at the bottom.

The species does not bask much, but a small warm spot of 28-30 °C gives the animals the chance to choose for themselves. Use a low-wattage halogen or incandescent bulb over a small part of the terrarium, so that it warms only one branch, and keep the rest of the terrarium at the ambient temperature. Avoid using spotlights in low terrariums, where they heat the whole space.

HUMIDITY AND WATER

Humidity should be high, about 70 % by day and 80-90 % at night, and never below 70 % for any length of time. Let the terrarium dry out a little in the late afternoon and mist thoroughly in the evening, so that the humidity rises after dark. The natural rhythm of a drier day and a more humid night keeps mould down and is good for the airways.

Mist at least once a day, preferably twice: morning and evening. The animals drink water that runs over leaves, bamboo and glass and lick it up themselves, and they almost never drink from a bowl. Use lukewarm water, not cold, which stresses them, and use ordinary tap water. Do not mist right after feeding, as the water washes the calcium off the insects. A misting system on a timer gives even humidity, especially in terrariums with mesh.

Dehydration is the most common mistake. The tail is a good measure: it should be flat and full. A thin, wrinkled or curled tail and sunken eyes are signs of too little water. After each shed, check that all toes are completely clean, so that the skin does not build up and take away the grip.

Read more: Calcium, vitamins and supplements

LIGHTING AND UVB

The species is nocturnal, but often rests in the open by day, so it gets a little sunlight in the wild. UVB is recommended, and a tube mounted above the terrarium's mesh suits Ferguson zone 1: the UV index should be about 1-2 at the uppermost resting places and zero in the shade. The animal must be able to hide from the light in plants and bamboo. A UV index meter helps, because the mesh, the plants and the age of the tube change the output.

Provide 12 hours of light in summer and 10 hours in winter, controlled by a timer. Leaf-tailed geckos have evolved with a day length of about 11 hours in winter and 13 in summer, and a clear seasonal rhythm is good for hormones, appetite and activity. The animals are sensitive to light at night, so keep the terrarium dark when the light is off. If there are to be live plants, use an LED plant lamp.

Without UVB the calcium supplement must contain D3.

Read more: Lighting and UVB

FEEDING

Uroplatus lineatus feeds on insects. Offer crickets as a base and supplement with cockroaches (for example dubia), grasshoppers and other feeder insects of a suitable size, at most slightly smaller than the gecko's head. The feeder insects must have been fed well in the past day. Release them into the terrarium late in the day, after misting. The animals hunt actively and strike at prey from the branches, so do not use feeding dishes with a hard bottom.

Adults are fed twice a week with a couple of large insects at a time, and juveniles three times a week. Small, captive-bred snails can be used for variety. Young animals take a little fruit or nectar, for example papaya, once a week, while adults seldom do. Remove feeder insects that have been left lying, so that they do not bother the animal.

Dust the insects lightly with calcium at every second feeding and a multivitamin every second week. With UVB the calcium should have little or no D3. Too much supplement causes obesity, which is seen as fat deposits under the jaw. Weigh adults regularly, and adjust the amount so that the weight stays stable.

Read more: Feeder animals: keeping and breeding Read more: Buying animals: captive-bred, wild-caught and transport

BEHAVIOUR AND HANDLING

The species is more an animal to look at than to hold in the hand. It rests quietly by day and is easily stressed. Handle it only when necessary, and at most once a week. A stressed gecko is in constant motion, may jump, open its mouth wide, arch its body, curl its tail and scream. Young animals can drop the tail, which grows back.

The colour change is a reliable signal. At rest the animal is matt light brown; when it "lights up", it develops sharp, dark stripes or turns orange. If this happens often and without an obvious reason, it indicates stress. A curled tail, sunken eyes and rubbing of the snout against the glass are other signs.

Socially, the species is unusually peaceful for a gecko: males can sit on the same branch without fighting. Even so, a single gecko or a pair is the safest way to keep them, and a small group with one male and two females can work in a large terrarium. Monitor new groups, and separate the animals if any get wounds.

Breeding

SEXUAL MATURITY AND SEXING

The sex is best seen in adult animals: males have distinct hemipenal bulges at the base of the tail, best seen from below. Age and weight at sexual maturity are not documented for the species, but the young grow quickly.

Put only females in breeding that are in top condition, have full calcium pouches in the neck and a stable weight.

MATING

The species is only rarely bred in captivity. A pair or one male and two females suit best. Males can tolerate each other in a large terrarium, but are preferably kept in separate groups during the breeding season.

A clear seasonal rhythm with slightly cooler and shorter days in winter and warmer, longer days in summer is the best precondition for getting the animals to breed. UVB for the adult animals increases the likelihood that the eggs hatch, presumably because the female can give the eggs more calcium. Give females extra calcium and some snails before and after laying.

EGG-LAYING AND CLUTCHES

The female lays one or two eggs per clutch and can lay several clutches in a season. The eggs are round and measure about 13 mm in diameter. They are laid under the leaves or in the substrate at the foot of a plant, and females readily use a vertical bamboo tube if there is one. Keep the substrate moist, give the female peace, and find the eggs afterwards.

After each clutch the female's weight and calcium pouches are checked. She needs time to recover, and if she loses weight, breeding must be stopped for the season.

INCUBATION

The eggs are incubated in a small, tight box with vermiculite and water in the ratio 2:1 by weight or with soaked sphagnum. Place the eggs on a small dish or a piece of foam, so that they do not lie directly in the wet substrate, and make sure that condensation does not drip on them. Humidity must be high, but the egg itself must be kept dry.

The temperature should be 21-27 °C, with a natural difference between day and night. The eggs hatch after about three months (about 90 days). The figure is based on few clutches, and a higher temperature gives a shorter time. Eggs from the same clutch hatch within a few days.

REARING THE YOUNG

The young are large in relation to the egg: about 9 cm in total and about 2 g. They begin to eat after about two weeks. Keep them in a small, humid tub or a small terrarium with moist sphagnum on the bottom, a plant, a water bowl and some bamboo sticks or branches. Cover most of the lid, so that the humidity stays, and mist twice a day. They often sit on the pane by day, presumably because it saves on moisture.

Give a little nectar or apricot baby food with added calcium for the first few weeks, and offer small crickets three times a week. The young are more prone to desiccation than adults. Young drop the tail easily, so avoid handling. Keep them the same size, and feed them small insects until they can take adult prey. Dust the food with calcium and a multivitamin every week for the first six months.

Health and common mistakes

Uroplatus lineatus is delicate, and lifespan is poorly known. Many animals live only two to three years in captivity, and females that lay eggs often only one to two years, but with good care the species can live up to about 15 years. Captive-bred animals live longer than wild-caught ones. Animals in poor condition can waste away quickly. The typical problems are:

- Dehydration. A thin or curled tail and sunken eyes show too little humidity or water.
- Shed skin remnants on the toes after shedding. They build up and take away the grip and can cost a toe. Mist the animal for several minutes, and remove the skin carefully with damp fingers. If it does not come off easily, the animal must go to a vet.
- Heat stress above 27 °C: restlessness, loss of appetite and emaciation.
- Snout injuries from rough substrate or rough furnishings when the animal strikes at prey.
- Obesity from too much food and supplements, with fat under the jaw.
- Dead young in the egg, or young that hatch weak. This can be caused by too little calcium and too little UVB in the adult animals.
- A dropped tail from stress or rough handling.
- Parasitic infection in the spinal cord (spinal nematodiasis) has been described in the species. Have a faecal sample examined if the animal develops nervous symptoms.

Weigh the animals regularly and keep an eye on muscle tone and calcium pouches. See a vet with reptile experience if the gecko loses weight, stops eating, seems listless or does not drink.

Always ask someone who knows

This guide is a good place to start, but it cannot replace experience. Animals differ, and much of what matters most is learned from people who have kept the species for years. Talk to a breeder, an experienced keeper or a vet who knows reptiles and amphibians before you get the animal - and again if anything looks wrong.